REMARKS

The Office Action mailed June 29, 2007 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-15 and 17 are pending in this application. Claims 1-12 stand rejected. Claims 13-15 are withdrawn from consideration as being directed to a non-elected invention. Claim 16 is canceled. Claim 17 is newly added. No new matter has been added. No additional fee is due for newly added Claim 17.

Applicant and the undersigned wish to thank Examiner Stinson for the courtesies he extended in a telephonic interview with Applicant's representatives, Eric Krischke and Melissa Glauber, on August 21, 2007, in which the merits of the case were discussed. More specifically, the presently pending claims were discussed with respect to the temperature sensors and/or the pressure sensors described in Japanese Patent Reference No. 04325195, Korean Patent Reference No. 2001098082, U.S. Pat. No. 5,873,518, and U.S. Pat. No. 5,439,019. The Examiner suggested that Applicant file a formal response including arguments presented during the interview. No further agreement was reached. This amendment is submitted in consequence of the interview.

The rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over either Japanese Patent Reference No. 04325195 (hereinafter referred to as "Japan '195") or Korean Patent Reference No. 2001098082 (hereinafter referred to as "Korea '082") in view of either U.S. Patent No. 5,873,518 to Richmond et al. (hereinafter referred to as "Richmond") or U.S. Patent No. 5,439,019 to Quandt et al. (hereinafter referred to as "Quandt") is respectfully traversed.

The rejection is treated as two different rejections below. Specifically, the rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Japan '195 in view of either Richmond or Quandt is traversed first. The rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Korea '082 in view of either Richmond or Quandt is traversed second.

The rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Japan '195 in view of either Richmond or Quandt is respectfully traversed.

Japan '195, to the extent understood, describes a controller (19) connected to a power switch (23), a water level sensor (22), a lid switch (24), a program selection switch (25), a start and stop switch (26) and a temperature sensor (35) that detects water supply temperature of a washing machine. A cold water supply and hot water supply supplying water at a temperature T2 is detected, and cold water supply and hot water supply valves are controlled such that a temperature T3 at setup water level L3 is within a determined fixed range. As such, Japan '195 describes that the temperature of the water supply is controlled based on temperature sensor output.

Richmond describes an appliance water valve assembly (12) which has a temperature and pressure sensing device (72) integrated therein. An appliance (10) includes the water valve assembly (12) in fluid communication with a pressure sense line (14). Air pressure in the pressure sense line (14) is indicative of the water level within the washbasin (16). The water valve assembly (12) includes a sensing device (72), a pressure inlet (74), and a thermoconductor (76). The sensing device (72) is provided to sense or otherwise detect the temperature within the mixing chamber (70) and the water level pressure within the pressure channel (74a). The sensing device (72) includes a temperature sensing surface (72a) and a pressure sensing surface (72b) in fluid communication with the pressure channel (74a) of the pressure inlet (74). As such, Richmond describes a temperature sensing surface (72a) for sensing temperature and a pressure sensing surface (72b) for sensing pressure. The temperature is adjusted based on the sensed temperature, and the water level is controlled based on the sensed pressure.

Quandt describes a clothes washer (10) having a washtub (32), actuator control knobs (28a-28d), and a controller (36). Using the actuator control knobs (28a-28d), an operator inputs the desired water temperature for the wash and rinse operations to the controller (36). The controller (36) computes and stores averages for the cold water temperature (T_C), the warm water temperature (T_W) and the flow rate (FR) of water from a mixing valve (38) into washtub (32). The fill rate (FR) is calculated by determining the time required to fill the washtub to a level corresponding to a particular pressure sensor (56a-e), and then dividing the gallons required to fill the washtub to that particular level by the measured time to fill to that level. The washtub (32) has a plurality of pressure sensors (56a-56e) disposed at various levels. Pressure sensor (56a) is positioned at the lowest level and provides an output indicating when water is filled to a 9.95 gallon level. Pressure sensors (56a-e) may be used

as a cross-correlation for the fill time (FT). For example, if the preselected level through control knob (28b) is for a medium wash load level (V) that corresponds to 15.65 gallons, and the level sensor (56c) also corresponds to 15.65 gallons, then theoretically the pressure sensor (56c) should provide an output signal at the completion of the fill time (FT). Controller (36) also uses timer (58) and pressure sensors (56a-56e) practically implemented as a multiposition pressure switch to determine a historical average of the flow rate (FR) into the washtub (32). As such, Quandt describes that water temperature (T_C and T_W) and flow rate (FR) are used to control water temperature in the washtub (32), and separate pressure sensors (56a-e) are used to determine a fill level.

Initially, Applicant respectfully submits that the Section 103 rejection of Claims 1-12 is not a proper rejection. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). MPEP § 2143. In the Office Action, the Examiner alleges that it would be obvious to combine the pressure sensing surface of Richmond or the pressure sensors of Quandt with the temperature control system of Japan '195 to produce the presently claimed invention.

More specifically, Japan '195 describes that the temperatures of cold and hot water supplies are detected by temperature sensors, and cold and hot water supply valves are controlled such that a temperature at a setup water level is within a determined fixed range. Richmond describes a water valve assembly that includes a temperature sensing surface for sensing temperature and a pressure sensing surface for sensing pressure. As such, in Richmond, the temperature is adjusted based on the sensed temperature, and the water level is controlled based on the sensed pressure. Richmond does not describe or suggest that the pressure sensing surface senses temperature nor that the temperature is controlled based on the sensed pressure. If the pressure sensing surface of Richmond were substituted for the temperature sensors of Japan '195, the washing machine temperature control system of Japan '195 would not be able to sense the temperature of the water and would be rendered unsatisfactory for its intended purpose.

Further, Quandt describes that water temperature and water flow rate are used to control water temperature in a washtub while separate pressure sensors are used to determine

a fill level. Quandt does not describe or suggest that the pressure sensors detect water temperature. If the pressure sensors of Quandt were substituted for the temperature sensors of Japan '195, the washing machine temperature control system of Japan '195 would not be able to sense the temperature of the water and would be rendered unsatisfactory for its intended purpose.

As such, it would not have been obvious to one skilled in the art to combine the pressure sensing surface, as described in Richmond, or the pressure sensors, as described in Quandt, with the temperature control system, as described in Japan '195. Accordingly, for this reason alone, Applicant respectfully requests that the Section 103 rejection of Claims 1-12 be withdrawn.

Claim 1 recites a temperature control for a washing machine, the washing machine including a tub, a hot water valve, and a cold water valve, said temperature control comprising "a first pressure sensor positioned to sense a full fill level in said tub and configured to generate a full fill signal when the tub is full; a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than the full fill level and corresponding to an adjustment level in said tub, said second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached; and a controller operatively coupled to said first and second pressure sensors, and said hot and cold water valves, said controller configured to control said valves based on the fill signals from said pressure sensors to control a wash water temperature."

None of Japan '195, Richmond, and Quandt, considered alone or in combination, describes or suggests a temperature control for a washing machine, as recited in Claim 1. More specifically, none of Japan '195, Richmond, and Quandt, considered alone or in combination, describes or suggests a temperature control that includes a controller operatively coupled to first and second pressure sensors and to hot and cold water valves, the controller configured to control the valves based on the fill signals from the pressure sensors to control a wash water temperature, as required by Applicant's claimed invention. Rather, in contrast to the present invention, Japan '195 describes temperature sensors that detect temperatures of cold and hot water supplies, wherein cold and hot water supply valves are controlled based on the detected temperatures, Richmond describes a water valve assembly that includes a temperature sensing surface for sensing temperature and a pressure sensing surface for sensing pressure, wherein the temperature is adjusted based on the sensed

temperature, and Quandt describes a controller that computes and stores averages for a cold water temperature, a warm water temperature, and a water flow rate and that controls the water temperature in a washtub based on the computed temperatures and flow rate.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Japan '195 in view of either Richmond or Qaundt.

Claims 2-5 depend from independent Claim 1. When the recitations of Claims 2-5 are considered in combination with the recitations of Claim 1, Applicant submits that dependent Claims 2-5 likewise are patentable over Japan '195 in view of either Richmond or Quandt.

Claim 6 recites a washing machine comprising "a tub; a cold water valve for controlling flow of cold water to said tub; a hot water valve for controlling flow of hot water to said tub; a first pressure sensor positioned to sense a full fill level in said tub and configured to generate a full fill signal when the tub is full; a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than full and corresponding to an adjustment level in said tub, said second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached; and a controller operatively coupled to said first and second pressure sensors and said hot and cold water valves, said controller operable to control said valves based on the fill signals from said pressure sensors to control a wash water temperature."

None of Japan '195, Richmond, and Quandt considered alone or in combination, describes or suggests a washing machine, as recited in Claim 6. More specifically, none of Japan '195, Richmond, and Quandt considered alone or in combination, describes or suggests a washing machine that includes a controller operatively coupled to first and second pressure sensors and to hot and cold water valves, the controller operable to control the valves based on the fill signals from the pressure sensors to control a wash water temperature, as required by Applicant's claimed invention. Rather, in contrast to the present invention, Japan '195 describes temperature sensors that detect temperatures of cold and hot water supplies, wherein cold and hot water supply valves are controlled based on the detected temperatures, Richmond describes a water valve assembly that includes a temperature sensing surface for sensing temperature and a pressure sensing surface for sensing pressure, wherein the temperature is adjusted based on the sensed temperature, and Quandt describes a controller that computes and stores averages for a cold water temperature, a warm water temperature,

and a water flow rate and that controls the water temperature in a washtub based on the computed temperatures and flow rate.

Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Japan '195 in view of either Richmond or Quandt.

Claims 7-12 depend from independent Claim 6. When the recitations of Claims 7-12 are considered in combination with the recitations of Claim 6, Applicant submits that dependent Claims 7-12 likewise are patentable over Japan '195 in view of either Richmond or Quandt.

The rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Korea '082 in view of either Richmond or Quandt is respectfully traversed.

Korea '082, to the extent understood, describes a control unit that senses the temperature of a tub before starting to feed water by using a temperature sensor after the temperature and water level of washing water is set. The control unit feeds a specific amount of cold water through an opened cold water valve. The control unit calculates the feed amount of cold water per unit time after measuring the temperature of cold water with the temperature sensor. The control unit then decides the current season by comparing the detected temperature and pressure of cold water with a set value. If the detected temperature is lower than 5° C, the control unit determines the current season to be winter. If the temperature is between 5-15° C, the control unit determines the current season to be spring or fall. Otherwise, the control unit determines the current season to be summer.

The control unit feeds a specific amount of cold and hot water through respective water valves. The control unit then detects the temperature of fed water and calculates the temperature of hot water by using the detected temperature of cold water. If the temperature of cold water is different from the fed cold or hot water, the control unit decides that the same amount and temperature of hot water is not fed. The control unit feeds cold water only without regard to temperature control routines. If hot water is fed, the control unit feeds water up to a slightly lower water level than the set level by controlling the two water valves. The control unit measures the temperature of water again and feeds water up to the set water level by controlling the valves according to a difference between the temperature of fed water

and the set temperature. As such, Korea '082 describes that the temperature of the water in the tub is controlled based on output from the temperature sensor.

Richmond and Quandt are described above.

Initially, Applicant respectfully submits that the Section 103 rejection of Claims 1-12 is not a proper rejection. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). MPEP § 2143. In the Office Action, the Examiner alleges that it would be obvious to combine the pressure sensing surface of Richmond or the pressure sensors of Quandt with the control unit of Korea '082 that senses temperature to produce the presently claimed invention.

More specifically, Korea '082 describes that the temperature of water in a tub is sensed as the tub fills with water and that water valves are controlled based on the sensed temperatures such that the temperature of the water in the tub is controlled based on the sensed temperatures. Richmond describes a water valve assembly that includes a temperature sensing surface for sensing temperature and a pressure sensing surface for sensing pressure. As such, in Richmond, the temperature is adjusted based on the sensed temperature, and the water level is controlled based on the sensed pressure. Richmond does not describe or suggest that the pressure sensing surface senses temperature nor that the temperature is controlled based on the sensed pressure. If the pressure sensing surface of Richmond were substituted for the temperature sensor of Korea '082, the control unit of Korea '082 that senses temperature would not be able to sense the temperature of the water and would be rendered unsatisfactory for its intended purpose.

Further, Quandt describes that water temperature and water flow rate are used to control water temperature in a washtub while separate pressure sensors are used to determine a fill level. Quandt does not describe or suggest that the pressure sensors detect water temperature. If the pressure sensors of Quandt were substituted for the temperature sensor of Korea '082, the control unit of Korea '082 that senses temperature would not be able to sense the temperature of the water and would be rendered unsatisfactory for its intended purpose.

As such, it would not have been obvious to one skilled in the art to combine the pressure sensing surface, as described in Richmond, or the pressure sensors, as described in Quandt, with the control unit that senses temperature, as described in Korea '082. Accordingly, for this reason alone, Applicant respectfully requests that the Section 103 rejection of Claims 1-12 be withdrawn.

Claim 1 recites a temperature control for a washing machine, the washing machine including a tub, a hot water valve, and a cold water valve, said temperature control comprising "a first pressure sensor positioned to sense a full fill level in said tub and configured to generate a full fill signal when the tub is full; a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than the full fill level and corresponding to an adjustment level in said tub, said second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached; and a controller operatively coupled to said first and second pressure sensors, and said hot and cold water valves, said controller configured to control said valves based on the fill signals from said pressure sensors to control a wash water temperature."

None of Korea '082, Richmond, and Quandt, considered alone or in combination, describes or suggests a temperature control for a washing machine, as recited in Claim 1. More specifically, none of Korea '082, Richmond, and Quandt, considered alone or in combination, describes or suggests a temperature control that includes a controller operatively coupled to first and second pressure sensors and to hot and cold water valves, the controller configured to control the valves based on the fill signals from the pressure sensors to control a wash water temperature, as required by Applicant's claimed invention. Rather, in contrast to the present invention, Korea '082 describes a control unit that senses the temperature of water in a tub as the tub fills with water and that controls water valves based on the sensed temperatures, Richmond describes a water valve assembly that includes a temperature sensing surface for sensing temperature and a pressure sensing surface for sensing pressure, wherein the temperature is adjusted based on the sensed temperature, and Quandt describes a controller that computes and stores averages for a cold water temperature, a warm water temperature, and a water flow rate and that controls the water temperature in a washtub based on the computed temperatures and flow rate.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Korea '082 in view of either Richmond or Quandt.

Claims 2-5 depend from independent Claim 1. When the recitations of Claims 2-5 are considered in combination with the recitations of Claim 1, Applicant submits that dependent Claims 2-5 likewise are patentable over Korea '082 in view of either Richmond or Quandt.

Claim 6 recites a washing machine comprising "a tub; a cold water valve for controlling flow of cold water to said tub; a hot water valve for controlling flow of hot water to said tub; a first pressure sensor positioned to sense a full fill level in said tub and configured to generate a full fill signal when the tub is full; a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than full and corresponding to an adjustment level in said tub, said second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached; and a controller operatively coupled to said first and second pressure sensors and said hot and cold water valves, said controller operable to control said valves based on the fill signals from said pressure sensors to control a wash water temperature."

None of Korea '082, Richmond, and Quandt, considered alone or in combination, describes or suggests a washing machine, as recited in Claim 6. More specifically, none of Korea '082, Richmond, and Quandt, considered alone or in combination, describes or suggests a washing machine that includes a controller operatively coupled to first and second pressure sensors and to hot and cold water valves, the controller operable to control the valves based on the fill signals from the pressure sensors to control a wash water temperature, as required by Applicant's claimed invention. Rather, in contrast to the present invention, Korea '082 describes a control unit that senses the temperature of water in a tub as the tub fills with water and that controls water valves based on the sensed temperatures, Richmond describes a water valve assembly that includes a temperature sensing surface for sensing temperature and a pressure sensing surface for sensing pressure, wherein the temperature is adjusted based on the sensed temperature, and Quandt describes a controller that computes and stores averages for a cold water temperature, a warm water temperature, and a water flow rate and that controls the water temperature in a washtub based on the computed temperatures and flow rate.

Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Korea '082 in view of either Richmond or Quandt.

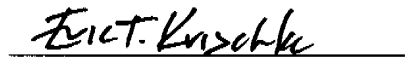
Claims 7-12 depend from independent Claim 6. When the recitations of Claims 7-12 are considered in combination with the recitations of Claim 6, Applicant submits that dependent Claims 7-12 likewise are patentable over Korea '082 in view of either Richmond or Quandt.

For at least the reasons set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 1-12 be withdrawn.

Claim 17 is a newly added independent claim, which Applicant submits is patentable over the cited art.

In view of the foregoing amendment and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,



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